

AMENDMENT TO THE CLAIMS

A copy of all pending claims and a status of the claims are provided below. Please **AMEND** claims 2-6, 9-11, 13-15, and 17-21 and **CANCEL** claims 1, 7, 8, and 10 without prejudice or disclaimer as follows:

1. (Canceled)
2. (Currently Amended) The control for an injector of claim 11, wherein the monitoring voltage is associated with an applied opening current.
3. (Currently Amended) The control for an injector of claim 11, wherein the monitoring voltage is associated with a start of an injection event.
4. (Currently Amended) The control for an injector of claim 11, wherein the monitoring voltage is associated with a feedback control signal.
5. (Currently Amended) The control for an injector of claim 11, wherein the monitoring voltage is associated with a duration of an injection event.
6. (Currently Amended) The control for an injector of claim 11, wherein the monitoring voltage includes a plurality of voltages, comprising:
 - a first voltage associated with an applied opening current;
 - a second voltage associated with a start of an injection event;

a third voltage associated with a feedback control signal;
a fourth voltage a duration of an injection event; and
a fifth voltage associated with an end of an injection event, wherein
the first voltage is greater than the second voltage,
the second voltage is greater than the third voltage,
the third voltage is greater than the fourth voltage, and
the fourth voltage is less than the second voltage.

7-8. (Canceled)

9. (Currently Amended) The control for an injector of claim 11, wherein the fluid pressure is ~~provide~~provided by an inlet rail during an injection event.

10. (Canceled)

11. (Currently Amended) A control for an injector, comprising ~~an a~~ a piezoelectric actuator energized by fluid pressure acting on a feedback piston ~~actuated by a fluid pressure~~ during an injection event to provide a monitoring voltage, ~~the energized device being a piezoelectric actuator energized by a said~~ feedback piston ~~which is being~~ moveable between a first position and a second position such that in the second position ~~[[,]]~~ the said feedback piston contacts a plate of ~~the said~~ piezoelectric actuator to generate the monitoring voltage, and ~~the said~~ feedback piston is moved from a first position to a second position with fluid provided from a working port.

12. (Original) The control for an injector of claim 11, wherein the monitoring voltage is provided to a controlling means for controlling an opening and closing time of a spool of an injector via an actuating plate.

13. (Currently Amended) A control valve for an injector, comprising:
a control valve body having a bore and a plurality of fluid connections;
a spool valve assembly moveable within the bore between a first position and a second position, ~~the~~the~~said~~ spool valve assembly having a first hydraulic surface and a second opposing hydraulic surface in fluid communication with a first fluid connection and a second fluid connection, respectively, of the plurality of fluid connections; and
an actuator having a fluid connection between ambient and the second hydraulic surface of ~~the~~the~~said~~ spool valve assembly, ~~the~~the~~said~~ actuator being sensitive to a spool valve opening via at least one of fluid pressure or mechanical pressure to provide a monitoring voltage.

14. (Currently Amended) The control valve of claim 13, wherein ~~the~~the~~said~~ actuator includes a check plate which is moveable between an open position and a closed position upon an application of current.

15. (Currently Amended) A control valve for an injector, comprising:
a control valve body having a bore and a plurality of fluid connections;
a spool valve assembly moveable within the bore between a first position and a second position, ~~the~~the~~said~~ spool valve assembly having a first hydraulic surface and a second opposing hydraulic surface in fluid communication with a first fluid connection and a second fluid

connection, respectively, of the plurality of fluid connections; and

an actuator having a fluid connection between ambient and the second hydraulic surface of ~~the~~the~~said~~ spool valve assembly, ~~the~~the~~said~~ actuator being sensitive to a spool valve opening via at least one of fluid pressure or mechanical pressure, ~~the~~the~~said~~ actuator including a check plate which is moveable between an open position and a closed position upon an application of current, the check plate generates a voltage upon the opening of the spool valve.

16. (Previously Presented) The control valve of claim 15, further comprising a feedback piston in communication with the check plate and working fluid for initiating the voltage.

17. (Currently Amended) The control valve of claim 16, wherein ~~the~~the~~said~~ feedback piston is movable from a first position upon opening of the spool valve assembly.

18. (Currently Amended) A control valve for an injector, comprising:
a control valve body having a bore and a plurality of fluid connections;
a spool valve assembly moveable within the bore between a first position and a second position, ~~the~~the~~said~~ spool valve assembly having a first hydraulic surface and a second opposing hydraulic surface in fluid communication with a first fluid connection and a second fluid connection, respectively, of the plurality of fluid connections;

an actuator having a fluid connection between ambient and the second hydraulic surface of ~~the~~the~~said~~ spool valve assembly, ~~the~~the~~said~~ actuator being sensitive to a spool valve opening via at least one of fluid pressure or mechanical pressure; and

a controller to monitor an injection event via the actuator and to control the opening and

closing of the spool valve of ~~the~~thesaid spool valve assembly based on the voltage generated by a check plate of ~~the~~thesaid actuator in response to the opening of the spool valve.

19. (Currently Amended) The control valve of claim 18, wherein ~~the~~thesaid controller utilizes a feedback control loop to adjust an injection event.

20. (Currently Amended) The control valve of claim 19, wherein ~~the~~thesaid controller senses the feedback piston contacting the check plate via a generated voltage.

21. (Currently Amended) A fuel injector, comprising:

an intensification body including a bore having a plunger and piston assembly biased in a first direction by a first spring and an intensifier chamber for pressurizing fuel;

a nozzle assembly in communication with ~~the~~thesaid intensification body, ~~the~~thesaid nozzle assembly including a needle valve system biased by a second spring to block injection ports and including a hydraulic surface to raise the needle valve away from the injection ports during an injection event; and

a control valve assembly in communication with ~~the~~thesaid intensification body, ~~the~~thesaid control valve assembly including a control valve body having a bore and a plurality of fluid connections, a spool valve assembly moveable within the bore and having a first hydraulic surface and a second opposing hydraulic surface in fluid communication with a first fluid connection and a second fluid connection, respectively, an actuator in fluid connection between ambient and the second hydraulic surface of the spool valve assembly, and an energizing device actuated by a fluid pressure during an injection event to provide a monitoring voltage.